

Module	C/CO	Lectures	Practice	Self-study	Together hours	Credits	
Winter semester - Inorganic technologies and materials I							
Ethics of scientific work and research integrity	C	7	3	20	30	1	
Physical chemistry	C	22	0	30	52	2	
Atom structure and chemical bond theory	C	8	7	30	45	2	
Chemistry, thermochemistry and chemical kinetics	C	6	8	30	44	2	
Types of chemical reactions and chemistry of selected chemical compounds	C	10	6	30	46	2	
Fundamentals of the technology of inorganic materials	C	12	0	30	42	2	
Engineering ceramics: classification and properties	CO	12	0	20	32	1	
Mechanical properties of materials	CO	8	24	30	62	3	
Experimental mechanics	CO	0	24	30	54	2	
Functional properties of materials and methods of their measurement	CO	24	0	30	54	2	
Biomaterials: introduction	CO	7	0	20	27	1	
Biomaterials: Preparation, characterization and use	CO	12	0	20	32	1	Credits for compulsory subjects: 11
Coatings and thin films: preparation of characterization	CO	10	10	30	50	2	Total number of credits: 23
Summer semester- Inorganic technologies and materials II							
History of glass production, properties of glass and glass-forming melts	C	12	0	40	52	2	
Glass production technology	CO	15	20	30	65	3	
Sintering	CO	8	24	30	62	3	
Excursion	CO	0	8	0	8	1	
Nanomaterials for anti-corrosion coatings	CO	4	6	15	25	1	
Nanomaterials for biomedical applications	CO	6	30	30	66	3	
Nanomaterials for optical applications	CO	6	6	30	42	2	
Sol- Gel and surface modification of nanoparticles	CO	6	30	30	66	3	
Introduction to analytical methods	C	4	0	40	44	2	
Methods of chemical analysis: Spectroscopy in inductively coupled plasma	CO	8	10	40	58	2	
Methods of chemical analysis: X-ray fluorescence	CO	4	6	15	25	1	
Electron microscopy	CO	4	8	15	27	1	
X-ray powder diffraction	CO	2	8	15	25	1	
Thermal analysis I	CO	6	19	20	45	2	
Thermal analysis II	CO	2	8	30	40	2	
Thermodynamics of electrochemical systems	CO	8	5	15	28	1	
Fundamentals of mathematical statistics	C	12	12	30	54	2	
Mathematical statistics: practical application	CO	12	12	30	54	2	
Mathematical statistics: case studies	CO	12	12	30	54	2	
Fundamentals of computational chemistry	CO	8	16	30	54	2	
Fundamentals of colloidal chemistry	CO	12	8	30	50	2	
Colloidal systems: characterization and utilization	CO	8	10	30	48	2	
Theoretical principles of molecular spectroscopy	C	15	0	40	55	2	
UV-vis-NIR spectroscopy	CO	10	15	30	55	2	
Photoluminescence spectroscopy	CO	10	20	40	70	3	
Infrared and Raman spectroscopy	CO	10	10	30	50	2	
Solid phase NMR spectroscopy	CO	10	0	15	25	1	Credits for compulsory subjects: 8
XPS: X-ray photoelectron spectroscopy	CO	10	0	15	25	1	Total number of credits: 53
Number of hours of compulsory subjects		108	36		464		
Number of credits of compulsory subjects							19

C/ CO=Compulsory Subject/ Compulsory Optional Subject